

# Exhibit 3

**REPORT OF PROFESSOR DAVID M. CUTLER**

In Re: Juul Labs, Inc., Marketing, Sales Practices, and Products Liability Litigation

United States District Court Northern District of California

Case No. 19-md-02913-WHO

Bellwether Government Entities

January 28, 2022

HIGHLY CONFIDENTIAL

3. In response to these questions, I find to a reasonable degree of professional and economic certainty as follows:

- A youth vaping epidemic is underway in each of the Bellwether Areas.
- The actions of JUUL had a causal impact on the use of vaping products by youth in the Bellwether Areas.
- The actions of Altria had a causal impact on the use of vaping products by youth in the Bellwether Areas.
- Costs of the abating the youth vaping epidemic can be quantified, and the specific costs needed for each of the Bellwether Areas are set forth in more detail below.

4. In reaching these conclusions, I incorporate by reference all the analyses and opinions set forth in my September 20, 2021, report. With respect to my final opinion, I rely upon the Expert Reports of Dr. Steven Kelder and Dr. Jonathan Winickoff and the abatement strategies set forth therein.<sup>2</sup> My analysis is ongoing, and I reserve the right to supplement and amend my opinions based on emerging information and new materials, testimony, and discovery that becomes available to me after the disclosure of my report.

## **II. Are There Youth Vaping Epidemics in the Bellwether Areas?**

5. The Wave 1 Government Entity Plaintiffs are:

- *King County, Washington*. King County is the 12<sup>th</sup> most populous county in the country and covers a vast area in western Washington state that includes the Seattle metropolitan area. As shown in Exhibit 1, the 20 school districts in King County run a

---

<sup>2</sup> See the Expert Reports of Dr. Steven Kelder, and Dr. Jonathon Winickoff, MD, in this matter, January 28, 2022 (hereafter “Kelder January 2022 Expert Report” and “Winickoff January 2022 Expert Report” respectively).

without JUUL's novel youth-appealing product design and marketing strategy,<sup>72</sup> youth e-cigarette use would have stayed constant if not fallen post-2017. My September 2021 Expert Report showed that this finding is robust to use of alternative methodologies for estimating "but for" vaping rates: Methods 1 and 2 show the same finding as Method 3, that vaping would have changed minimally between 2017 and 2019 but for JUUL.<sup>73</sup> My findings here with respect to effects of school proximity on stores' JUUL sales show that, in the Bellwethers as in the U.S. overall, skyrocketing JUUL sales in 2017-19 were substantially fueled by youth JUUL use.<sup>74</sup>

#### **IV. Causal Impact of Altria**

39. My September 2021 Report examined the role of Altria in contributing to the youth vaping epidemic by examining two sales efforts it conducted for JUUL after investing in it: the "Blitz" sales campaign undertaken in March through May of 2019, and a program of "ITP resets" that upgraded the space in retail stores where "innovative tobacco products" (like e-cigarettes) are displayed and moved JUUL into a prominent place in the ITP space.<sup>75</sup> As discussed in that Report, there were other contributions of Altria to JUUL sales, including help with its PMTA application, but these were two major programs Altria undertook for JUUL for which its effects on sales can be estimated empirically.

40. To examine the role of these two Altria programs in increasing sales in the Bellwether Areas, I implement the same analyses conducted in my September 2021 Report with some adaptations to the Bellwether context. With respect to the Blitz campaign, Altria visited a total of 1,122 of the 2,266 stores in and around the Bellwether Areas, and the regression model can be

---

<sup>72</sup> Cutler September 2021 Expert Report, Section VI.B.

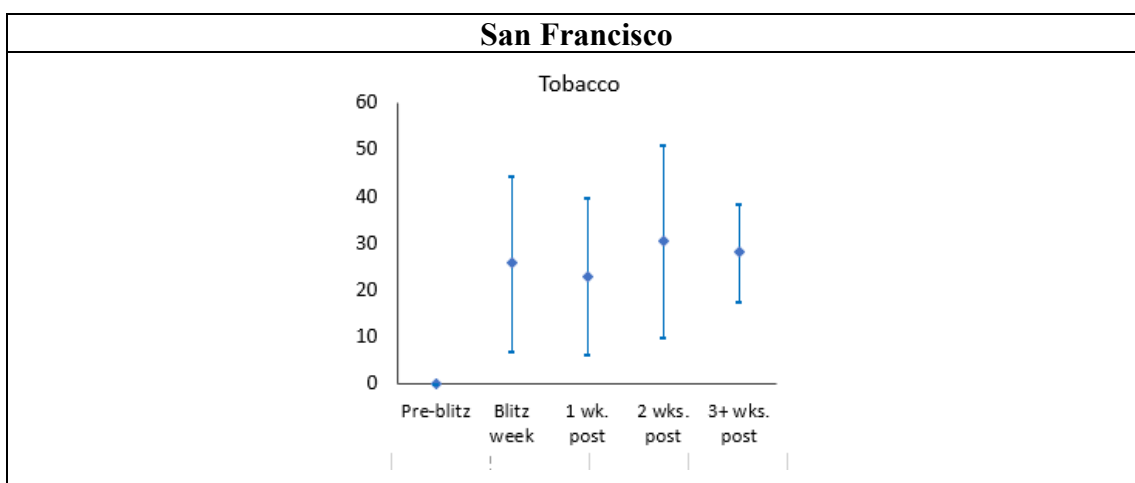
<sup>73</sup> Cutler September 2021 Expert Report, Section VI.A, especially Exhibit 24.

<sup>74</sup> Cutler September 2021 Expert Report, Section II.

<sup>75</sup> See the Cutler September 2021 Expert Report, Section VII.B.

43. Exhibit 13 shows effects of the Blitz campaign on San Francisco stores. As the Blitz campaign took place after San Francisco banned sales of all flavored tobacco products, including menthol products,<sup>81</sup> I estimate the regression model for San Francisco for sales of tobacco pods only. Here too, Altria's Blitz sales visits had a significant positive effect on sales: Stores that were visited during the Blitz campaign saw pod sales rise by about 25-30 pods over what they otherwise would have been, with the significant effect persisting after Week 3.

**Exhibit 13: Effects of Altria Blitz Visits on Weekly JUUL Tobacco Pod Sales<sup>82</sup>**



44. In my September 2021 Expert Report, I showed that the estimated effects did not result from stores that had Blitz visits pulling sales away from other stores, as might happen if, for example, JUUL buyers changed which stores they bought from having observed the “Blitzed” stores to be better stocked.<sup>83</sup> Rather, Altria Blitz visits significantly increased aggregate sales of JUUL pods within given zip codes, indicating that positive and significant store-level results are

<sup>80</sup> Appendix 5 provides details.

<sup>81</sup> As mentioned above, stores' compliance with the ban was high after compliance inspections phased in at the end of 2018. See ¶ 11.

<sup>82</sup> Appendix 5 provides details.

<sup>83</sup> See Cutler September 2021 Expert Report, Appendix 12.

the same time period. As I showed in my September 2021 Expert report, this positive effect on sales was not a result of sales shifting to stores that had had ITP resets and away from those that had not. Rather, ITP resets significantly increased aggregate sales of JUUL pods within given zip codes, indicating that sales shifts within areas do not explain results.<sup>87</sup> Had Altria not provided these types of support for JUUL growth, the flow of JUUL products to youth in the Bellwether Areas would have been smaller, and the youth vaping epidemic would not have reached the proportions it did. Altria clearly had a substantial and meaningful impact on the increase of youth vaping rates, in the Bellwether Areas as in the U.S. overall.

## **V. Cost of Abatement**

47. My September 2021 Expert Report discussed generally the resources that government entities would need to abate the youth vaping epidemics underway in their jurisdictions. As discussed there,<sup>88</sup> these include, but are not limited to: staff resources for on-campus monitoring and prevention; resources for community and parent prevention education outreach; staff resources for student academic and other support; resources for development and deployment of prevention curricula; resources for addiction counseling and treatment; resources for acquisition and installation of prevention technology, where appropriate; resources for signage and physical modification to premises, where appropriate; human and technical resources for monitoring and prevention related to school-sponsored activities off campus (including, for example, on school buses and at sporting and extra-curricular activities); resources related to student discipline and legal proceedings; resources to establish and maintain peer-to-peer mentorship and prevention programming; resources for development and deployment of media and targeted marketing

---

<sup>87</sup> See Cutler September 2021 Expert Report, Appendix 12, ¶¶ 6-8 and Exhibit A12.3.

<sup>88</sup> See Cutler September 2021 Expert Report, Section IV.

### Appendix 3

#### Implementation of Method 3 for the Bellwether Areas

1. My September 2021 Expert Report used state-level YRBS data from 2015 and 2017 to estimate a model that can be used to predict youth vaping in 2019, based on youth characteristics, previous substance use, and state-level vaping-related policies and prices.<sup>127</sup> In the current Report, I use results of this model, along with state- or school district-level survey data and information on state-level vaping-related policies and prices, to predict what youth vaping in the area would have been in each Bellwether Area had previous relationships between determinants of vaping and vaping prevalence not changed between 2017 and 2019.<sup>128</sup>
2. I first use the YRBS school-district data for San Francisco Unified and Palm Beach County and state-level data for Arizona, Kansas, and New Hampshire to compute average values of variables measuring youth characteristics and substance use for 2017 and 2019. For King County, I use county-level averages available from the Washington Youth Survey's website.<sup>129</sup> Information on state-level vaping-related policies and prices for the Bellwether Areas is taken from data compiled for my September 2021 Expert Report.<sup>130</sup>
3. I compute the predicted change in vaping between 2017 and 2019 for each Bellwether Area by multiplying the 2017-19 change in each explanatory variable by its estimated regression

---

<sup>127</sup> Details and results of the Method 3 regression model are given in Appendix 10 of my September 2021 Expert Report.

<sup>128</sup> For convenience I refer to the changes as measured between 2017 and 2019, although the changes for King County, WA, and Pima County, AZ, are between 2016 and 2018 (also a period of rising youth vaping and JUUL sales, as shown in Exhibits 2 and 3 above). The Stata program, "yrbs\_analyze\_jan.do," included in the backup materials to the current Report implements the Method 3 analysis for the Bellwether Areas.

<sup>129</sup> Data from the Washington Youth Survey's website are provided in the spreadsheet, "Washington Youth Survey.xlsx," in the backup materials to the current report. As the website does not provide an overall average for the grades surveyed (8, 10, and 12), I take averages for given variables across the three grades as the overall average. Although the Washington Youth Survey collects data on almost all of the variables that appear in the Method 3 regression, it does not collect information on seat-belt use or participation in team sports, nor provide information on the distribution of students across grades. To compute the predicted change in vaping for King County, I assume these variables did not change between survey years.

<sup>130</sup> See Appendix 10 of my September 2021 Expert Report.

schools included in the distance measure. All other aspects of the regression specification are as before.<sup>137</sup>

8. Results are shown in Exhibit A4.3 (including all schools with grades in the 6-12 range in the distance measure) and A4.4 (excluding K-8 schools). For flavored pods and flavored and mint pods taken together, estimated effects of distance are negative and statistically significant, i.e., as a store's distance to the closest school increases, its pod sales decrease, holding constant other factors expected to affect store sales. Results for mint pods alone are also negative and statistically significant, although at a weaker 10% level only. In contrast, there are no significant effects of distance on sales of tobacco or menthol pods, separately or together. Thus, the results the same as those of the main specification: proximity to schools is associated with significantly higher sales of flavored and mint pods, consistent with a significant effect of youth demand on JUUL sales growth.

---

<sup>137</sup> Note that here, as above, stores with sales in the top 1% of the distribution or that are located more than 6 miles from the closest school are excluded from the sample to avoid undue influence of outliers.



**Exhibit A5.1**  
**Numbers of Stores in the Bellwether Area and the Share Visited by Altria in the Blitz Campaign**

|                               | <b>Total stores</b> | <b>Stores visited by Altria in Blitz Campaign</b> | <b>Share of stores with a Blitz visit</b> |
|-------------------------------|---------------------|---|---|
| <i>Bellwether Area</i>        |                     |   |   |
| King County, WA               | 585                 | 357   | 61%                                       |
| San Francisco, CA             | 417                 | 93  | 22%                                       |
| Palm Beach, FL                | 459                 | 195   | 43%                                       |
| Tucson, AZ. CBSA              | 352                 | 207   | 59%                                       |
| Wichita, KS, CBSA             | 230                 | 134   | 58%                                       |
| Rochester, NH, & environs     | 223                 | 136   | 61%                                       |
| Total Across Bellwether Areas | 2,266               | 1,122   | 50%                                       |

3. Exhibit A5.2(a)-(f) shows results of the regression analysis for each Bellwether.

| <b>Exhibit A5.2(a)</b><br><b>Estimated Effects of Altria Blitz Visits on Weekly Sales:</b><br><b>King County</b>   |                   |                  |                     |                     |
|--|-------------------|------------------|---------------------|---------------------|
|  | <b>Total pods</b> | <b>Mint pods</b> | <b>Tobacco pods</b> | <b>Menthol pods</b> |
| Blitz week   | 26.866**          | 16.592**         | 6.499*              | 3.775*              |
|  | (6.228)           | (4.463)          | (2.583)             | (1.683)             |
| One week after   | 44.179**          | 26.642**         | 11.733**            | 5.804**             |
|  | (8.050)           | (5.924)          | (2.468)             | (1.500)             |
| Two weeks after  | 25.348**          | 20.049**         | 4.874+              | 0.425               |
|  | (7.579)           | (5.618)          | (2.619)             | (1.388)             |
| Three or more weeks after  | 45.508**          | 35.281**         | 7.746**             | 2.481**             |
|  | (6.774)           | (5.268)          | (1.486)             | (0.801)             |
| Weekly time indicator variables  | yes               | yes              | yes                 | yes                 |
| Number of obs.   | 26,910            | 26,910           | 26,910              | 26,910              |
| Adjusted R-Squared   | 0.052             | 0.041            | 0.025               | 0.013               |
| Robust standard errors clustered at the store-level in parentheses.<br>** = statistically significant at 1% level. * = statistically significant at 5% level.<br>+ = statistically significant at 10% level. |                   |                  |                     |                     |

**Exhibit A5.3**  
**Total Stores in the Bellwether Area and the Number with an Altria ITP Reset in**  
**Jan.-Aug. 2019**

|                               | <b>Total stores</b> | <b>Stores with an ITP<br/>Reset by Altria in<br/>Jan.-Aug. 2019</b> |
|-------------------------------|---------------------|---|
| <i>Bellwether Area</i>        |                     |   |
| King County, WA               | 585                 | 81  |
| San Francisco, CA             | 417                 | 8   |
| Palm Beach, FL                | 459                 | 6   |
| Tucson, AZ, CBSA              | 352                 | 30  |
| Wichita, KS, CBSA             | 230                 | 27  |
| Rochester, NH, & environs     | 223                 | 2   |
| Total Across Bellwether Areas | 2,266               | 154   |

5. Results of the ITP reset model are shown in Exhibit A5.4. Because mint and menthol pods were not sold in San Francisco during the data period, San Francisco stores are not included in the regressions explaining sales of these two pod types. As I found in my September 2021 Expert Report, in the Bellwether Areas too Altria's ITP resets significantly increased the sales of reset stores over those of otherwise similar stores over the same period, again demonstrating that Altria's significant contribution to rising JUUL sales as youth vaping increased.